

an interface embodied in said housing for converting digital signals to magnetic signals which are presented to said tape player;

a processor, said processor interpreting user actuation of at least one of said tape player user controls as a command to control the presentation of said audio information in a predetermined manner;

a first spindle rotating member driven by the tape player cassette driving mechanism;

a second spindle rotating member;

a linking member coupled to the first spindle rotating member and the second spindle rotating member; and

a sensor for monitoring the motion of said linking member and for generating a signal indicative of linking member motion; said processor being responsive at least in part to said signal indicative of linking member motion for controlling the presentation of said audio information.

44. A device according to claim 43, wherein said linking member is a belt such that when the second rotating member is driven the first rotating member follows the same motion.

45. A device according to claim 44, wherein the belt causes at least one of the first and second rotating members to rotate to emulate proper take up of a cassette tape.

46. A device according to claim 43, further including a generator coupled to at least one of said first rotating member and said second rotating member and said linking member.

47. A device according to claim 44, further including a belt tensioning member for varying the speed of at least one of said rotating members.

48. A device according to claim 43, further including at least one sensor for determining that said tape player is in a "play" mode.

49. A device according to claim 48, wherein said at least one sensor is a magnetic sensor.

50. A device according to claim 48, wherein said at least one sensor is an optical sensor.

51. A device according to claim 43, wherein said audio information includes a plurality of musical performances and the presentation of said musical performances is controlled to present a user specified musical performance.

52. A device according to claim 51, wherein said user specified musical performance is specified by advancing to the next performance.

53. A device according to claim 51, wherein said user specified musical performance is specified by musical performance number.

54. A device according to claim 51, wherein said user specified musical performance is specified by the user in response to an audio message.

55. A device for insertion into a tape player having a plurality of user controls and a cassette driving mechanism including a capstan comprising:

a removable solid state storage device for storing digital signals representing audio information;

an interface embodied in said housing for converting digital signals to magnetic signals which are presented to said tape player;

a processor, said processor interpreting user actuation of at least one of said tape player user controls as a command to control the presentation of said audio information in a predetermined manner;

a first spindle rotating member driven by the tape player cassette driving mechanism;

a second spindle rotating member;

a linking member coupled to the first spindle rotating member and the second spindle rotating; and

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a sensor coupled to said processor for monitoring the motion of said linking member and for generating a signal indicative of linking member motion;

wherein said processor is operable in response to at least user input to control accessing said storage device to result in the presentation of said audio information at a user specified point.

56. A device according to claim 55, wherein said audio information includes a plurality of musical performances and the presentation of said musical performances is controlled to present a user specified musical performance.

57. A device according to claim 55, wherein said user specified musical performance is specified by advancing to the next performance.

58. A device according to claim 55, wherein said user specified musical performance is specified by musical performance number.

59. A device according to claim 55, wherein said user specified musical performance is specified by the user in response to an audio message.

60. A device according to claim 55, further including a second sensor coupled to said processor for sensing the rotational motion of the tape player's capstan and for generating a signal indicative of capstan rotational motion.

61. A device according to claim 55, wherein said linking member is a belt that causes at least one of the first and second rotating members to rotate to emulate proper take up of a cassette tape.

62. A device according to claim 55, further including a generator coupled to at least one of said first rotating member, second rotating member and said linking member.

63. A device according to claim 55, wherein said linking member is a belt and further including a belt tensioning member for varying the speed of at least one of said rotating members.

64. A device according to claim 60, wherein said second sensor is used by said processor to determine that said tape player is in a "play" mode.

65. A device according to claim 60, wherein said second sensor is a magnetic sensor.

66. A device according to claim 60, wherein said at least one sensor is an optical sensor.

67. In an interface device having a digital data processor and a digital memory for transferring audio information to tape equipment designed to process signals from magnetic storage media, the method comprising the steps of:  
rotating a first rotating member;

rotating a belt linked to a second rotating member so as to drive a second rotating member;

sensing the motion of said belt and coupling a signal indicative thereof to a digital data processor; and

accessing an audio selection stored in a digital memory under the control of said digital data processor for presentation to a user.

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68. A method according to claim 67, further including the step of applying a tensioning force to said belt.

69. A method according to claim 67, further including the step of driving a generator with said belt.

70. A method according to claim 67, further including the step of storing said audio selection in a removable digital storage device for insertion into an insertion port in said interface device.

71. A method according to claim 67, further including the step of monitoring the motion of said belt.

72. For use with a device for insertion into an audio tape player having a plurality of user controls and for responding to user actuation of one of said controls to place said audio tape player in a state to initiate a selected operation when a cassette has been inserted into said player, a method for operating said device comprising the steps of:

rotating a first rotating member;

rotating a belt linked to a second rotating member so as to drive a second rotating member;

detecting the motion of said belt; and

determining at least one state of the tape player based at least in part on the detected belt motion.

73. A method according to claim 72, further including the step of driving a generator at least in part by said belt;

coupling a signal from said generator to a digital processor; and

determining by said digital processor the state of said tape player based at least in part on said signal from said generator.

74. A method according to claim 72, further including the step of applying tension to said belt.

75. A method according to claim 72, further including the steps of detecting with at least one sensor a change in operation of the audio tape player; and

altering the presentation of audio signals in response to a detected change in operation of the equipment.

76. The method according to claim 75, whereby the step of detecting a change in operation includes the step of detecting at least the change to paused motion.

77. The method according to claim 75, wherein the step of detecting a change in operation includes the step of detecting at least the change to stopped motion.

78. The method according to claim 75, wherein the step of detecting a change in operation includes the step of detecting at least the change from no motion to forward operation.

79. The method according to claim 75, wherein said processor uses a position pointer to identify digital information for processing and presentation to a user and wherein said altering step, in response to said detecting step detecting a change in the operation of the audio tape player, includes the step of the repositioning said pointer to identify different digital information for processing and presentation.

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80. The method according to claim 75, wherein said altering step in response to said detecting step detecting a change in the operation of the tape player includes the step of generating a user message signal by the device in the form of magnetic signals and transmitting said magnetic signals to the equipment.

81. A method according to claim 72, further including the steps of connecting said device to an external speaker, and controlling operation by said processor in an audio player mode independent of said audio tape player.

82. For use with a device for insertion into an audio tape player having a plurality of user controls and for responding to user actuation of one of said controls to place said audio tape player in a state to initiate a selected operation when a cassette has been inserted into said player, a method for operating said device comprising the steps of:

rotating a rotating member within the tape player;

rotating a belt in the emulation device linked to said rotating member; 112

detecting the motion of said belt; and

determining the current state of the tape player based at least in part on the

Q detected belt motion.

83. A method according to claim 82, wherein said rotating member is the tape player's capstan.

84. A method according to claim 82, further including the step further including the step of driving a generator at least in part by said belt.

85. A method according to claim 84, further including the steps of coupling a signal from said generator to a digital processor; and  
determining by said digital processor the state of said tape player based at least in part on said signal from said generator.

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86. An emulation device for insertion into a tape player having a plurality of user controls and a cassette driving mechanism including a rotatable capstan, said emulation device comprising:

a solid state storage device for storing digital signals representing audio information;

o an interface embodied in said housing for converting digital signals to 112 magnetic signals which are presented to said tape player;

a processor, said processor interpreting user actuation of at least one of said tape player user controls as a command to control the presentation of said audio

o information in a predetermined manner;

a linking member being driven by said capstan; and

a sensor, coupled to said processor, for monitoring the motion of at least one of said linking member and said capstan. ✓

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### REMARKS

New emulation device related apparatus and method claims 43-86 have been added, prior to examination, for prosecution in this application. Original audio